

REMARKS

Claims 8, 9, 13 and 14 have been previously withdrawn from the present application, and therefore claims 1-7 and 10-12 are currently pending in the present application. Claim 2 has been amended to correct a typographical error, and claim 10 has been amended to clarify a claimed feature.

Applicants gratefully acknowledge the Examiner's indication that claims 2-7 are allowed.

Claims 1 and 10-12 have been rejected under 35 U.S.C. § 103(a) as unpatentable over U.S. Patent No. 5,675,518 to Kuroda et al. ("Kuroda") in view of U.S. Patent No. 6,480,787 to Yoshikawa et al. ("Yoshikawa"). Applicants respectfully submit that the obviousness rejection should be withdrawn for at least the following reasons.

In rejecting a claim under 35 U.S.C. § 103(a), the Examiner bears the initial burden of presenting a prima facie case of obviousness. In re Rijckaert, 9 F.3d 1531, 1532, 28 U.S.P.Q.2d 1955, 1956 (Fed. Cir. 1993). To establish prima facie obviousness, three criteria must be satisfied. First, there must be some suggestion or motivation to modify or combine the reference teachings. In re Fine, 837 F.2d 1071, 5 U.S.P.Q.2d 1596 (Fed. Cir. 1988). This teaching or suggestion to make the claimed combination must be found in the prior art and not based on the application disclosure. In re Vaeck, 947 F.2d 488, 20 U.S.P.Q.2d 1438 (Fed. Cir. 1991). Second, there must be a reasonable expectation of success. In re Merck & Co., Inc., 800 F.2d 1091, 231 U.S.P.Q. 375 (Fed. Cir. 1986). Third, the prior art reference(s) must teach or suggest all of the claim features. In re Royka, 490 F.2d 981, 180 U.S.P.Q. 580 (C.C.P.A. 1974).

Claim 1 recites, in relevant parts, "determining a first inter-vehicle distance between the moving vehicle and a second vehicle **based on GPS measurements obtained at both vehicles**," and "independently determining a second inter-vehicle distance **based on relative motion** of the moving vehicle and the second vehicle **obtained using INS sensors at both vehicles**." Claim 10 recites, in relevant parts, "a processor capable of determining a first inter-vehicle distance between the vehicle and the second vehicle based on the pseudo range of the vehicle and on GPS measurements communicated from the second vehicle," and "wherein the processor determines a second inter-vehicle distance based on the relative

motion of the first vehicle and on **a relative motion of the second vehicle detected using an INS system of the second vehicle and communicated from the second vehicle.**”

In the Office Action, the Examiner contends that Fig. 2 and column 1 of Kuroda disclose “an inter-vehicle distance between a host vehicle and a vehicle in front” using “**inertial sensors mounted at the vehicles.**” (Office Action, p. 2). Furthermore, the Examiner contends that column 9 and Figs. 17 and 18 of Kuroda discloses using “signals from outside of the vehicle, i.e., signals from a GPS.” (Office Action, p. 4). Applicants will address these issues in detail below.

First, in contrast to the Applicants’ claimed invention, which requires “determining a second inter-vehicle distance **based on relative motion** of the moving vehicle and the second vehicle **obtained using INS sensors at both vehicles,**” nothing in Kuroda teaches that an inter-vehicle distance is determined based on information **obtained using INS sensors at both vehicles**, i.e., the host vehicle and the target vehicle. In fact, Fig. 1 clearly shows only one vehicle with inter-vehicle distance measuring apparatus, and column 1, lines 55-63 clearly indicate that “**an inter-vehicle distance measuring apparatus equipped in a host vehicle receives inter-vehicle distance data measured by an external inter-vehicle distance measuring apparatus installed by a road through a road-to-vehicle communications unit, and corrects an error in the distance value measured by an inter-vehicle distance measuring unit equipped in the host vehicle.**” At the most, the entire inter-vehicle distance measuring and correction process involves the **inter-vehicle distance measuring apparatus equipped in a host vehicle and an external inter-vehicle distance measuring apparatus installed by a road**; Kuroda simply has nothing to do with “determining a second inter-vehicle distance **based on relative motion** of the moving vehicle and the second vehicle **obtained using INS sensors at both vehicles,**” as recited in claim 1, and as similarly recited in claim 10. Since Yoshikawa similarly fails to teach or suggest this feature, the combination of Kuroda and Yoshikawa fails to render obvious claims 1 and 10, as well as claims 11 and 12 dependent on claim 10.

Independent of the above, with respect to the Examiner’s contention that column 9 and Figs. 17 and 18 of Kuroda discloses using “signals from outside of the vehicle, i.e., signals from a GPS,” this contention is simply unsupported by the actual disclosure of Kuroda. Figs. 17 and 18 of Kuroda merely show a signal symbol reaching the

communications means 51, and the accompanying description in column 9 merely indicates that the communications means 51 communicates “data with the outside through a communication medium such as radio waves, light, and so on [and] receives inter-vehicle distance information from the outside.” (See Kuroda, col. 9, lines 12-14 and 43-47). There is simply no reasonable basis for concluding that “the inter-vehicle distance information from the outside” mentioned in Kuroda is signals from a GPS. On the contrary, in connection with Fig. 1, Kuroda clearly states that the “inter-vehicle distance measuring system is implemented by a TV camera 5 and an image processing unit 6 installed by the road,” and the captured data is transmitted to the host vehicle through a road-to-vehicle communications unit 7. (See Kuroda, col. 3, lines 27-29 and 40-43). In view of the above, there is simply no reasonable basis to conclude that signals from a GPS is described in column 9 and shown in Figs. 17 and 18 of Kuroda. To the extent that the Examiner may be relying on the doctrine of inherent disclosure, the Examiner must provide a “basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristics necessarily flow from the teachings of the applied art.” (See M.P.E.P. § 2112; emphasis in original; see also Ex parte Levy, 17 U.S.P.Q.2d 1461, 1464 (Bd. Pat. App. & Inter. 1990)). With respect to the teachings of Kuroda, the Examiner has not provided any support for the notion that the teachings of Kuroda would necessarily lead to the conclusion that inter-vehicle distance measurements involve GPS signals.

Independent of the above, with respect to the Examiner’s further contention that column 6 of Kuroda discloses “that GPS measurements may be used to determine if there is an error in the inter-vehicle distance determination, thus an inter-vehicle distance is obtained using GPS,” (Office Action, p. 2), this contention is simply not supported by the actual disclosure of Kuroda. Column 6 of Kuroda (in connection with Fig. 7) discloses two ways of detect and correct errors in the inter-vehicle distance measuring apparatus 3 of the host vehicle: a) measure a carrier frequency or a data transmission frequency of the signal received from the communications unit 7 installed by a road, and compare the measured frequency (which is used as a reference) to “a frequency of a clock signal generated by a clock generator 31A in an inter-vehicle distance measuring unit 31 equipped in the host vehicle 1” to detect errors in the clock signal (col. 6, lines 17-27); and b) “radio waves at 1.57542 GHz from GPS satellites may be received in order to correct measurement errors and detect a trouble in the inter-vehicle distance measuring apparatus 3” (col. 6, lines 36-39). To the extent the Examiner is relying on column 6, lines 36-39 of Kuroda as disclosing the use of

GPS measurements in inter-vehicle distance measurement, this conclusion is not supported by the actual text of Kuroda. When read in the overall context of the paragraph spanning line 16-39 of column 6 of Kuroda, the statement that “radio waves at 1.57542 GHz from GPS satellites may be received in order to correct measurement errors” does not refer to taking GPS *measurements*, i.e., determining distances from GPS signals; instead, this statement refers to using the 1.575 GHz signal from GPS satellites as a reference frequency for comparison to a frequency of a clock signal generated by a clock generator 31A in an inter-vehicle distance measuring unit 31 to detect errors in the clock signal.

Independent of the above, Applicants respectfully submit that the Examiner has not provided any basis for combining the selected teachings of Kuroda and Yoshikawa in the manner asserted by the Examiner. In order to establish a *prima facie* case of obviousness, not only must the cited references teach or suggest each element of the claim, but the prior art must also *suggest the desirability* of combining the elements in the manner contemplated by the claim. M.P.E.P. § 2143.01 (citing In re Mills, 916 F.2d 680, 16 U.S.P.Q.2d 1430 (Fed. Cir. 1990)). The mere fact that references *can* be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. In re Mills, 916 F.2d 680, 16 U.S.P.Q.2d 1430 (Fed. Cir. 1990).

Fundamentally, the teachings of Kuroda have very little to do with the teachings of Yoshikawa. While the teachings of Kuroda relate to comparing the inter-vehicle distance measurement made by a host vehicle to a corresponding inter-vehicle distance measurement made by a road-side inter-vehicle distance measuring system, the teachings of Yoshikawa relates to a GPS receiving system that achieves an equivalent synchronization in time measurement of GPS signals using software to determine relative positions and relative velocities of moving objects. Furthermore, there is no clear suggestion in the prior art why the asserted combination of Kuroda and Yoshikawa would be desirable. Applicants respectfully submit that the Examiner's conclusion reflects an impermissible subjective “obvious-to-try” standard, which can not be used to support an obviousness rejection. In fact, the Federal Circuit in the case of In re Kotzab has made plain that even if a claim concerns a “technologically simple concept,” there still must be some finding as to the “specific understanding or principle within the knowledge of a skilled artisan” that would motivate a person having no knowledge of the claimed subject matter to “make the combination in the manner claimed.” In re Kotzab, 55 U.S.P.Q.2d 1313, 1318 (Fed. Cir. 2000). Applicants respectfully submit that there have been no such findings in the present case.

For at least these reasons, it is respectfully submitted that the combination of Kuroda and Yoshikawa does not render obvious claims 1 and 10, as well as claims 11 and 12 which depend from claim 10. Withdrawal of the obviousness rejection of claims 1 and 10-12 is therefore respectfully requested.


CONCLUSION

In view of all the above, it is believed that the pending claims in allowable condition. It is therefore respectfully requested that the rejections be reconsidered and withdrawn, and that the present application issue as early as possible.

The Office is authorized to charge the \$1,020 fee for the three-month extension of time to respond to the February 24, 2005 Office Action to Kenyon & Kenyon's Deposit Account No. 11-0600.

Respectfully submitted,

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